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## <u>AMENDMENTS TO THE DRAWINGS</u>

The attached sheet of drawings includes changes to Figure 4C.


Attachment:          Replacement sheet

Annotated sheet showing changes


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## REMARKS

Upon entry of this paper, claims 1-17, 19-34, 36-51, 53-70 and 72-92 are presently pending in this application. Claims 1, 19, 36, 53, 72-76 have been amended. Claims 18, 35, 52, 71 and 93 have been cancelled. No claims have been added. No new matter has been added. The Specification has been amended to correct minor misspellings and to correctly refer to the reference characters of Figure 4A. Figure 4C has been amended to replace the use of the reference character "65" with the correct "75". Applicants submit that all of the pending claims are patentable and in condition for allowance.

### Claim Rejections

Claims 1, 12, 15-18, 32-35, 49-53, 64, 67-72, 75, 76, 90-93 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bishop, ("Modern Control Systems Analysis and Design Using Matlab and Simulink", Addison-Wesley Longman, Inc., pages 1, 7-16, 98-102, 1997), (hereafter "Bishop"), (Office Action, p.3, § 7).

Claims 2-4, 6, 7, 13, 19-21, 23, 24, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82 and 88 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Guiberson et al (US Patent 6,088,029), (hereafter "Guiberson").

Claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85 and 89 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Mathworks ("Using Simulink", Version 2.2, January 1998, pages 4-1-4-20, 7-2, 7-8-7-14, 9-118-9-125, 9-146-9-152).

Claims 11, 63, 86 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Chen et al (US Patent 5,684,945), (hereafter "Chen").

Claim 28 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Guiberson as applied to claim 19 above, and further in view of Chen.

Claims 22, 25-27 and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Guiberson as applied to claim 19 above, and further in view of Mathworks.

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Claims 37-41 and 47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Mathworks as applied to claim 36 above, and further in view of Guiberson.

Claim 45 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Mathworks as applied to claim 36 above, and further in view of Chen.

I. Claim Rejections Under 35 U.S.C. §102(b):

Claims 1, 12, 15-18, 32-35, 49-53, 64, 67-72, 75, 76, 90-93 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bishop, ("Modern Control Systems Analysis and Design Using Matlab and Simulink", Addison-Wesley Longman, Inc., pages 1, 7-16, 98-102, 1997), (hereafter "Bishop"), (Office Action, p.3, § 7). Applicant respectfully traverses these rejections.

Bishop discusses control systems analysis and design using MATLAB and SIMULINK. The document describes a general approach to designing and analyzing feedback control systems, (p.16, § 1.4). Bishop further discusses using SIMULINK to develop a simulation of the control system. Bishop also discusses using SIMULINK to provide a graphical methodology for developing the simulation using block diagrams, (p. 95, § 5.4). Figures 5.4-5.12 of Bishop illustrate block diagrams models designed using SIMULINK. Bishop also discusses simplifying high order transfer functions to solve feedback control system problems, (chapter 5).

Claim 1

Claim 1, upon which claims 2-17 are dependent, recites "providing a control system separate from the dynamic system model, the control system having two or more data modules" [emphasis added]. Bishop does not disclose the use of the data modules claimed by Applicant. The data modules of claim 1 receive data outputs from the dynamic system and then forward, manipulate, review, and/or display the data, (Detailed Description, p. 13, lines 26-27). The control system includes, among other things, a controller that configures and synchronizes the data collection being performed by the data modules, (Detailed Description, p. 13, lines 27-29). The data modules are part of a system separate from the dynamic system being monitored or measured, (Detailed Description, p. 13, lines 30-31).

In contrast to the requirements of Applicant's claim, Bishop discusses dynamic system models, but Bishop does not disclose "providing a control system separate from the dynamic

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system model, the control system having two or more <u>data modules</u>" [emphasis added]. The blocks "yout" and "tout" of the block diagram models illustrated in Bishop's figures are not "data modules" as defined by Applicant's claim. The Bishop "yout" and "tout" blocks are part of the dynamic system being analyzed and are not part of a separate system being synchronized by a controller. The language identified by the Examiner as disclosing the previous version of claim 1 refers to Figure 5.12 of Bishop which illustrates the simulation of a control system to illustrate aircraft dynamics, (Office Action, p. 3, § 8). The blocks "yout" and "tout" of Figure 5.12 of Bishop are a part of the Simulink diagram to write the bank angle and simulation time to the workspace (Bishop, p. 100, ¶ 2) rather than being data modules that are part of a <u>separate</u> control system. Bishop thus does not disclose the data modules required by claim 1.

Moreover, Bishop does not teach "synchronizing data collection by the two or more data modules using the control system," as required by the amended claim 1. The language identified by the Examiner in rejecting the previous version of claim 1 refers to starting and stopping of a simulation using the options given in a simulation menu, (Office Action, p. 3, § 8). Bishop discusses the variation in the response of the simulation to different control parameters, (Bishop, p. 100, § 5.4.1). However, Bishop lacks the separate control system synchronizing the 'tout' and 'yout' blocks and therefore does not disclose synchronizing data collection by the two or more data modules using the control system as required by Applicant's claim.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 1 under U.S.C. § 102(b).

<u>Claims 12 and 15-17</u>

Claims 12 and 15-17 depend from claim 1 and as such incorporate each and every element of claim 1. Therefore, claims 12 and 15-17 are allowable for at least the same reasons discussed above for claim 1. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 12 and 15-17 under U.S.C. § 102(b).

<u>Claims 32-34</u>

Claims 32-35 depend from independent claim 19 and as such incorporate each and every element of claim 19. Claim 19 has been amended to recite "providing a control system <u>separate</u>

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from the dynamic system model, the control system having two or more data modules"
[emphasis added]. As argued above, Bishop does not disclose the required data modules that are
part of a separate control system or synchronization of the data collection performed by the data
modules using the separate control system. Therefore, claims 32-34 are allowable for at least the
same reasons discussed above for claim 1. Accordingly, Applicant respectfully requests the
Examiner to reconsider and withdraw the rejection of claims 32-34 under U.S.C. § 102(b).

### Claims 49-51

Claims 49-51 depend from independent claim 36 and as such incorporate each and every
element of claim 36. Claim 36 has been amended to recite "providing a control system separate
from the dynamic system model, the control system having two or more data modules"
[emphasis added]. As stated above, Bishop does not disclose either the required data modules
that are part of a separate control system or the synchronizing of the collection of data by the
data modules using the separate control system. Therefore, claims 49-51 are allowable for at
least the same reasons discussed above for claim 1. Accordingly, Applicant respectfully
requests the Examiner to reconsider and withdraw the rejection of claims 49-51 under U.S.C. §
102(b).

### Claims 53, 64 and 67-70

Claims 64 and 67-70 depend from independent claim 53 and as such incorporate each
and every element of claim 53. Claim 53 has been amended to recite "providing a control
system separate from the dynamic system, the control system having two or more data modules"
[emphasis added]. As indicated above, Bishop does not disclose either the required data
modules that are part of a separate control system or the synchronization of the collection of data
by the data modules using the control system. Therefore, claims 53, 64 and 67-70 are allowable
for at least the same reasons discussed above for claim 1. Accordingly, Applicant respectfully
requests the Examiner to reconsider and withdraw the rejection of claims 53, 64 and 67-70 under
U.S.C. § 102(b).

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### Claim 72

Independent claim 72 has been amended to recite "a control system <u>separate from the dynamic system model</u>, the control system having two or more <u>data modules</u>" [emphasis added]. As noted above, Bishop does not disclose either the required data modules that are part of a separate control system or the required synchronization of the collection of data by the data modules using the control system. Therefore, claim 72 is allowable for at least the same reasons discussed above for claim 1. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 72 under U.S.C. § 102(b).

### Claim 75

Independent claim 75 has been amended to recite "a control system <u>separate from the dynamic system</u>, the control system having two or more <u>data modules</u>" [emphasis added]. As previously noted, Bishop does not disclose either the required data modules that are part of a separate control system or the synchronization of the collection of data by the data modules using the separate control system. Therefore, claim 75 is allowable for at least the reasons discussed above for claim 1. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 75 under U.S.C. § 102(b).

### Claims 76 and 90-92

Claims 90-92 depend from independent claim 76 and as such incorporate each and every element of claim 76. Claim 76 has been amended to recite "providing a control system <u>separate from the dynamic system model</u>, the control system having two or more <u>data modules</u>" [emphasis added]. As discussed above, Bishop does not disclose either the required data modules that are part of a separate control system or the necessary synchronization of the collection of data by the data modules using the control system. Therefore, claims 76 and 90-92 are allowable for at least the same reasons discussed above for claim 1. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 76 and 90-92 under U.S.C. § 102(b).

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II. Claim Rejections Under 35 U.S.C. §103(a):

  Claims 2-4, 6, 7, 13, 19-21, 23, 24, 29, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82 and 88 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Guiberson et al (US Patent 6,088,029), (hereafter "Guiberson"). Applicant respectfully traverses these rejections.

  Guiberson discusses a real-time data display in a control window of a measurement instrument. Real-time data corresponding to an application is received, wherein the real-time data is to be displayed to a user. A control window is also displayed, including one or more user-selectable options within the control window and at least a portion of the real-time data within a portion of the control window. A user selection of an option to alter the acquisition of the real-time data is then received, and real-time data being displayed is altered within the portion of the control window in accordance with the user-selected option, (Col.1, ¶ 5).

  As discussed above, Bishop does not disclose, teach or suggest either the required data modules or the synchronization of the data modules with the control system. Guiberson also does not teach or suggest the missing claim elements.

  Claims 2-4, 6, 7, 13, 19-21, 23, 24, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82 and 88 all recite, or depend upon claims that recite: "the control system having two or more data modules, the two or more data modules being communicatively coupled to receive data." See Claims 1, 19, 53, 73, and 76. While, Guiberson discusses a real-time data display that can be modified by a user it does not teach or suggest the data modules that are part of a separate control system that are required by Applicant's claims. Furthermore, Guiberson does not teach the synchronization of the collection of data by the data modules using the control system.

  Since the cited combination of Bishop in view of Guiberson does not teach or suggest the two or more data modules or the synchronization of the data modules required by claims 2-4, 6, 7, 13, 19-21, 23, 24, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82 and 88. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 2-4, 6, 7, 13, 19-21, 23, 24, 29, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82 and 88 under U.S.C. § 103(a) (Applicant notes in passing that the reasons for the rejection of claim 29 were not specifically provided in the Office Action).

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Claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85 and 89 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Mathworks ("Using Simulink", Version 2.2, January 1998, pages 4-1-4-20, 7-2, 7-8-7-14, 9-118-9-125, 9-146-9-152), (hereafter "Mathworks"). Applicant respectfully traverses these rejections.

Mathworks discusses SIMULINK version 2.2, a software package for modeling, simulating and analyzing dynamical systems. SIMULINK provides a graphical user interface (GUI) for building models as block diagrams, using click-and-drag mouse operations, (p.1-2, ¶ 6-7).

The Examiner cited Mathworks as teaching various claim elements for the dependent claims, (e.g. a suspend function, a data history function, buffering modes etc., see p. 14, ¶ 42 of Office Action). However, Mathworks was not cited as teaching or suggesting, nor does it teach or suggest, the required data modules and the synchronization of the data modules by the separate control system recited in Applicant's independent claims. Accordingly, since the cited combination of Bishop in view of Mathworks fails to teach or suggest all of the elements of claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85 and 89, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85 and 89 under U.S.C. § 103(a).

Claims 11, 63, 86 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76 above, in view of Chen et al (US Patent 5,684,945), (hereafter "Chen"). Applicant respectfully traverses these rejections.

Chen discusses an analysis tool and a performance tool for a data processing system, (Col. 2, lines 64-67). The system in Chen includes a tool for monitoring, capturing, saving, retrieval and analysis of data processing system operations, (Col. 3, lines 1-3). The data display subsystem is an instrument that plots up to 24 values simultaneously in the preferred embodiment, while reading all values taken at the same time, (Col. 22, lines 26-29). If the size of the instrument is too small to show the entire time period, the history property can be scrolled to look at older values, (Col. 23, lines 32-34). Since the graph image can be bigger in the viewing area, scrolling is accomplished by using a scroll-bar widget, (Col. 23, lines 39-42).

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The amended independent claims upon which claims 11, 63 and 86 depend (claims 1, 53 and 76 respectively) all require a control system that is separate from the dynamic system with "the control system having two or more data modules, the two or more data modules being communicatively coupled to receive data." The independent claims upon which claims 11, 63 and 86 depend also require the synchronization of the data modules with the separate control system. Chen fails to teach or suggest the required data modules that are part of a separate control system or the synchronization of the collection of data by the data modules with the control system. Since, as noted above, Bishop also fails to teach or suggest at least the required data modules that are part of a separate control system and the required synchronization of the collection of data by the data modules using the control system, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 11, 63 and 86 under U.S.C. § 103(a).

Claim 28 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Guiberson as applied to claim 19 above, and further in view of Chen. Applicant respectfully traverses this rejection.

Claim 28 depends from independent claim 19 and as such incorporates each and every element of claim 19. Claim 19 has been amended to recite "providing a control system separate from the dynamic system model, the control system having two or more data modules, the two or more data modules being communicatively coupled to receive data from the dynamic system model." The cited combination of Bishop and Guiberson in view of Chen does not teach or suggest at least either the required data modules that are part of a separate control system or the required synchronization of the collection of data by the data modules using the control system. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 28 under U.S.C. § 103(a).

Claims 22, 25-27 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop and Guiberson as applied to claim 19 above, and further in view of Mathworks. Applicant respectfully traverses these rejections.

Claims 22, 25-27 and 31 depend from independent claim 19 and as such incorporate each and every element of claim 19. Claim 19 has been amended to recite "providing a control

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system separate from the dynamic system model, the control system having two or more data
modules, the two or more data modules being communicatively coupled to receive data from the
dynamic system model." As noted previously, claim 19 also requires the synchronization of the
collection of data by the data modules using the separate control system. The cited combination
of Bishop and Guiberson in view of Mathworks does not teach or suggest either the required
data modules that are part of a separate control system or the synchronization of data collection
by the data modules with the separate control system. Accordingly, Applicant respectfully
requests the Examiner to reconsider and withdraw the rejection of claims 22, 25-27 and 31 under
U.S.C. § 103(a).

Claims 37-41 and 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over
Bishop and Mathworks as applied to claim 36 above, and further in view of Guiberson.
Applicant respectfully traverses these rejections.

Claims 37-41 and 47 depend from independent claim 36 and as such incorporate each
and every element of claim 36. Claim 36 has been amended to recite "providing a control
system separate from the dynamic system model, the control system having two or more data
modules, the two or more data modules being communicatively coupled to receive data from the
model of the dynamic system." As the cited combination of Bishop and Mathworks in view of
Guiberson does not teach or suggest either the required data modules that are part of a separate
control system or the synchronization of the data collection by the data modules using the
control system, Applicant respectfully requests the Examiner to reconsider and withdraw the
rejection of claims 37-41 and 47 under U.S.C. § 103(a).

Claim 45 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Bishop
and Mathworks as applied to claim 36 above, and further in view of Chen. Applicant
respectfully traverses this rejection.

Claim 45 depends from independent claim 36 and as such incorporates each and every
element of claim 36. As discussed above, claim 36 has been amended to recite "providing a
control system separate from the dynamic system model, the control system having two or more
data modules, the two or more data modules being communicatively coupled to receive data
from the model of the dynamic system." As stated previously, the cited combination of Bishop

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and Mathworks in view of Chen does not teach or suggest either the required data modules that are part of a separate control system or the synchronization of the collection of data by the data modules using the control system. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 45 under U.S.C. § 103(a).

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## CONCLUSION

In view of the above, Applicant believes the pending application is in condition for allowance and urge the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-029. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Dated: January 29, 2007                          Respectfully submitted,

                                                 By _____
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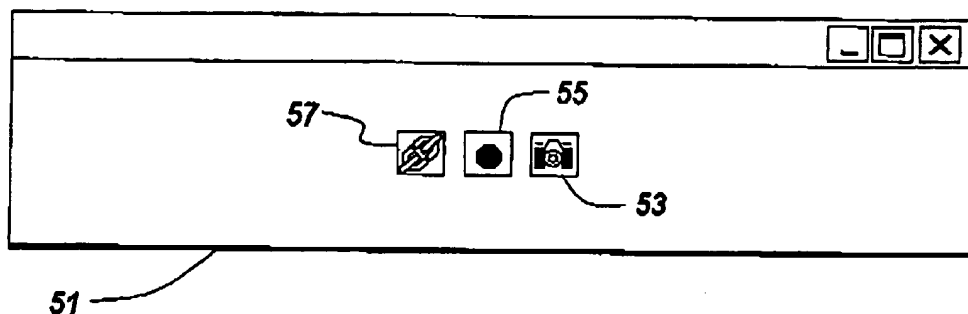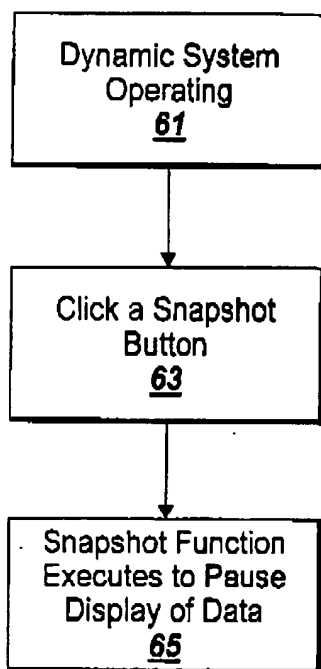                                                 Boston, Massachusetts 02109-2127
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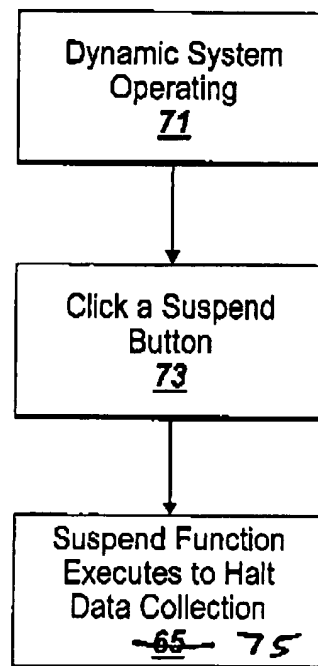                                                 Attorney/Agent For Applicant

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## Fig. 4A



## Fig. 4B



## Fig. 4C